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Foot-shock stimulation decreases the inhibitory action of atp on contractility and end-plate current of frog sartorius muscle

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Abstract

© 2018 Ayrat Usmanovich Ziganshin et al. Background and Objective: Inhibitory action of ATP on contractions of frog isolated sartorius muscle was shown earlier, while hydrocortisol prevented that effect of ATP. The aim of this study was to investigate whether ATP also inhibits the contractility of sartorius muscle on stress-induced animals. Materials and Methods: The influence of ATP on contractions and end-plate current (EPC) of sartorius muscles isolated from frogs exposed to electric foot-shock stimulation (EFSS) was analyzed. Results: In the muscles of frogs exposed to EFSS, the inhibitory effect of ATP on contractions was significantly decreased and on EPC was abolished. The level of cortisol was much higher in the blood obtained from EFSS animals comparing with control ones. Conclusion: The EFSS has inhibitory action on the effect of ATP on the frog sartorius muscle and that could be due to increase of cortisol blood level.

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Keywords

ATP, Contractions, Cortisol, End-plate current, Foot-shock, Frog sartorius muscle

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